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Designing meningitis vaccines.

Buttery JP, Moxon ER.

Department of Paediatrics, University of Oxford, John Radcliffe Hospital, Headington. jim.buttery@paediatrics.ox.ac.uk

Conjugate polysaccharide vaccines are a recent intervention to combat the relative inability of young children to mount an effective immune response against encapsulated bacteria, especially Haemophilus influenzae (Hib), Neisseria meningitidis (Nm) and Streptococcus pneumoniae (Sp). These organisms cause the majority of community acquired septicaemia and meningitis in UK children. Their capsular polysaccharides, important virulence factors in evading phagocytosis, are poorly immunogenic in young children compared to adults. Conjugation, by covalent linking, of the polysaccharide to an immunogenic protein, has been demonstrated for each of these organisms to produce good antibody response to the polysaccharide. Conjugate Hib vaccines have proven effective in reducing Hib meningitis and invasive disease in the countries that have introduced them. Pneumococcal conjugate vaccines have proven effective in preventing invasive disease caused by serotypes contained in the vaccines. Efficacy studies are awaited for meningococcal conjugate vaccines.

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